IN THE SPECIFICATION:

Please replace the indicated paragraphs with the following rewritten paragraph:

[0029] According to a further object of the invention, the switched multiple battery system is configured for disposition within a vehicle for electrical communication with conventional vehicle battery cables. In the event the main battery output is too low to start the vehicle, the operator manipulates the switch to the auxiliary position, thereby bringing the auxiliary battery online, which is maintained in the fully charged state by the charging diode circuit. Upon starting the vehicle, the operator manipulates the switch back to the normal position, thereby engaging the main battery to operate and recharge from the electrical system and recharging the auxiliary batteries with the electrical system through the one-way charging circuit ~~to begin recharge~~. The main and auxiliary batteries being recharged in the conventional manner during vehicle operation.

[0041] The multiple battery system can also have a controller coupled to and switching the at least one switching device. The multiple battery system can also have an at least one sensor in communication with the controller. The at least one sensor can include an at least one main battery voltage sensor, an at least one main battery ~~cold cranking amperage sensor~~amperage sensor, an at least one auxiliary battery voltage sensor, an at least one switch position sensor, and an at least one auxiliary battery ~~cold cranking amperage sensor~~amperage sensor. The controller can couple to and communicate with the position sensor to detect the position of the switching device and selectively engage the switching device based on the input of at least one of the at least one main battery voltage sensor, the at least one main battery cold cranking sensor, the at

least one auxiliary battery voltage sensor, and the at least one auxiliary ~~cold cranking amperage sensor~~amperage sensor.

[0042] The multiple battery system can also have an auxiliary battery discharge system. The auxiliary battery discharge system can have a controller with a timer. The timer can signal the controller to periodically change the switch position so as to discharge the auxiliary battery in the second operating position of the at least two operating positions for ~~short~~ periods and then switch back to the first operating position of the at least two operating positions.

[0043] The discharge system can also be a written instruction to manually switch the battery system to the second operating position for a ~~brief~~ period of time and then to manually switch the switching device to the first operating position.

[0044] The discharge system can also have the controller switch the switching device to couple the common positive terminal to the auxiliary battery positive output if an input signal from an at least one sensor indicates that the main battery voltage or ~~cold cranking amperage~~amperage is below a trigger point.

[0050] The system can also have a controller coupled to and switching the switching device. An at least one sensor in communication with the controller can be provided. The at least one sensor in communication with the controller can include an at least one switch position sensor to detect the position of the switching device and the controller can then actuate the switching device

based on input from the an at least one switching device sensor and at least one of a main battery voltage sensor, a main battery cold cranking, an auxiliary battery voltage sensor, and an auxiliary ~~cold cranking amperage~~amperage sensor.

[0052] The discharge system can also be a written instruction to manually switch the battery system to the second operating position for a ~~brief period~~ period of time and then to manually switch the switching device to the first operating position.

[0060] The multiple battery system can also comprise a controller coupled to and switching the switching device. An at least one sensor can also be in communication with the controller. The at least one sensor in communication with the controller can include at least one switch position sensor to detect the position of the at least one switching device and at least one of a main battery voltage sensor, a main battery ~~cold cranking amperage sensor~~amperage sensor, an auxiliary battery voltage sensor, and an auxiliary ~~cold cranking amperage sensor~~amperage sensor, the switch device being actuated by the controller based on input from one of the at least one sensor.

[0061] The auxiliary battery attachment system can also have an auxiliary battery discharge system. Again, the auxiliary battery discharge system can have a controller with a timer. The timer can signal the controller to periodically change the switch position so as to discharge the auxiliary battery in the second operating position of the at least two operating positions for short periods and then switch back to the first operating position of the at least two operating positions. The discharge system can also comprise a written instruction to manually switch the battery

system to the second operating position for a ~~brief period~~ period of time and then to manually switch the switching device to the first operating position.

[0072] Figure 9 shows a circuit diagram of an exemplary embodiment of the instant invention incorporating an auxiliary battery discharge cycling system.

[0087] Additional charging circuit configurations could include, but are not limited to, an at least one high capacity one-way diode 410 coupled with an at least one high capacity heat sink as the one-way charging circuit 400. As an alternate charging circuit configuration the combination of an at least one high capacity diode 410 would need to be coupled to a suitable heat sink or similar heat dissipation device that can handle the high amounts of heat generated by the diode. Having a high capacity diode is critical as the higher amounts of heat might be unsafe if the diode is mounted alone or in too close a proximity to the volatile components of a battery. As the amount and rate of heat dissipation is greatly affected by a wide range of parameters associated with the application, the size and placement of the high capacity diode and the heat sink can vary greatly. Various design parameters associated with the diode environment, including but not limited to the proximity to plastics and volatile chemicals, the size of the ~~at~~ heat sink or sinks, the diode size, the location of the battery, the environment of the battery, and other parameters can be used in determining the size and ratings of the high capacity diode and heat sink combination and placement of the combination within or without the battery housing.

[0069] Figures 5a and 5b show a top view and a circuit diagram, respectively, of an exemplary embodiment of the instant invention in ~~the~~a storage operational mode.

[0079] In the exemplary embodiment shown in Figures 1-5, switching device 300 is included in the housing. It selectively electrically couples the main battery 100 ~~and~~ or the auxiliary battery 200 to the electrical system ~~of the vehicle~~. Additional embodiments can vary the number of operating positions or location and placement of the switching device 300. For instance, in additional exemplary embodiments the switching device 300 may be included with an attachment or separate housing containing the circuitry and auxiliary battery 200, as discussed further in relation to figures 6 and 7 herein below. Furthermore, for the sake of brevity in this description, reference is made to a three-position switching device 300 having first 350, second 360, and tertiary 370 switch positions. The relative number and position of the switch positions as shown can be changed or varied without departing from the inventive aspects of the device. Additionally, the switching of the switching device 300 may be automated through a control mechanism or circuit that senses the condition of the battery system, as further discussed in relation to Figure 8 herein below. Moreover, a periodic discharge system for the multiple battery system of the instant invention can also be added, as further described in relation to Figure 9.

[0083] Figures 3a and 3b show a top view and a circuit diagram, respectively, of an exemplary embodiment of the instant invention in a normal operational mode. Figure 3A shows the device in a first switch position 350. In this first, main, or normal switch position or mode 350, indicated in the circuit diagram of figure 3B at switch position S1, the main battery 100 is electrically coupled to the electrical system and the auxiliary battery 200 is electrically coupled to the electrical system through the one way charging circuit 400. The electrical system (not shown) is coupled to common positive post 310, which in turn is coupled to the switching device

300. The switching device 300, when in the S1 position or normal operating mode 350, connects ~~both~~ the main positive output 110 and via the one way charging circuit 400 the auxiliary positive output 210 ~~via the one-way charging circuit 400~~ to the common positive post 310 and, thereby, the electrical system (not shown). Both the main negative output 120 and auxiliary negative output 220 are coupled to the negative output post or terminal 320, which is coupled back to the electrical system (not shown) to complete the connection.

[0084] The two batteries are coupled by a one-way charging circuit 400 that precedes the auxiliary battery 200, as indicated in the circuit diagram of Figure 3B. The one-way charging circuit 400 is a one-way circuit allowing for electricity to pass from the electrical system of the vehicle (not shown) to replenish the auxiliary battery 200. As the electrical system of the vehicle (not shown) is providing the current needed to run all the auxiliary equipment, it is simultaneously, through the one-way charging circuit 400, also providing a full charging voltage to the backup or auxiliary or standby battery 200 as well as preventing any discharge from the backup or auxiliary battery 200. Effectively, the one way charging circuit 400 is a one-way electrical valve permitting electricity to flow in one direction into the auxiliary battery 200 in the main or first switch position 350.

[0090] Figures 5a and 5b show a top down view and a circuit diagram of an exemplary embodiment of the instant invention in ~~an~~ tertiary or storage operational mode. An operator or controller manipulates the switching device 300 to the tertiary, off, or storage position 370, represented by switch position S3 in the circuit diagram of Figure 5B. This position provides for disconnection of both batteries for storage. The S3 position disconnects the main positive output

110 and the auxiliary positive output 210 from the common positive terminal 310 and, thereby, the electrical system of the vehicle or equipment. This is useful if the vehicle or equipment is being placed in storage for instance or if the battery is being stored.

[0094] The exemplary embodiment shown includes a similar one-way charging circuits 400, that can include an at least one one-way charging diode or rectifier 4010 and similar switched circuit configurations with positions S1, S2 and S3, as described in relation to Figures 3b, 4b, and 5b. Similar amperage ratings and voltages for various applications can be utilized in the exemplary embodiments of the attachment system. This provides similar functionality from the attachment system embodiments of the instant invention. The positions would include a first, main, or normal operating mode or position 350 in which the vehicle or equipment operates off the main battery 1000, which is always receiving a charge from the electrical system of the vehicle or equipment and charging the auxiliary battery 200; a secondary or auxiliary position 360, where the auxiliary battery 200 would be engaged as the sole source of electrical power for the vehicle or device; and a tertiary or storage position 370. The second or auxiliary switch position 360 would be used for emergency back up when needed to start and or operate the vehicle when the main battery 1000 is incapable of starting or operating the vehicle, equipment, or machinery. Thus the attachment device would provide a retrofit version of the instant invention, requiring no modification or conversion of existing vehicle or machinery electrical systems, while providing identical performance to the exemplary embodiments of the multiple battery system.

[0098] Figure 9 shows circuit diagram for an auxiliary battery discharge cycling system for a still further exemplary embodiment of the instant invention. The still further embodiment of the

instant invention is provided that includes an auxiliary battery discharge cycling system 800. This discharge cycling system can, for instance, be included as an automated auxiliary battery discharge cycling system, as shown in the exemplary circuit diagram of Figure 9. In other non-limiting examples of exemplary embodiments, the discharge cycling system can be incorporated as part of the controller 700 shown in figure 8 or as a separate manual discharge unit or through simple instructions to the operator to periodically run the vehicle in the second or auxiliary operational setting in an auxiliary setting for a short period of time, as shown in figure 10.

[0099] The auxiliary battery discharge cycling system 800 would operate to ensure the longevity of the auxiliary battery 200 by periodically engaging the auxiliary battery 200 to start and/or operate the vehicle or equipment. Such a system can include a timer 820 coupled to a switching device 300, the timer 820 periodically activating the switching device 300 which in turn switches the system to the auxiliary operational mode 360 for a short period of time, as described above in relation to figures 4a and 4b. The system would operate to periodically provide for a slight discharge the auxiliary battery 200 in the auxiliary-operating mode 350. By providing for a slight discharge, the auxiliary battery 200 would be lower than its peak voltage and would then need to be recharged by the battery system in its first or normal operating mode, as described above. This would help extend the life of the auxiliary battery by maintaining the condition of the electrodes and keeping the electrolytic solution active. Alternatively, as shown in Fig. 10, the auxiliary battery discharge system 800 can incorporate written instructions 821 to an operator to periodically manually switch the multiple battery system from a first operating position to the second operating position for a period of time and then back to the first position. The exemplary embodiments employing the auxiliary battery discharge cycling system 800 in its various forms

would only operate for a short period of time so as not to accidentally run down the auxiliary battery 200.

Please add paragraph [0072.1]

[0072.1] Figure 10 shows a circuit diagram of an exemplary embodiment of the instant invention incorporating a manually operated auxiliary discharge cycling system.